

Work Order ID 139205

November 16, 2015 2:44:45 PM

139205*To ship Jan 11 2016*

Page 1

Item ID: D412-786-013

Accept

N900040100Setup Start ***NS1***

Revision ID:

Item Name: Fwd Hardpoint Installation

Stop ***NS2***

Start Date: 11/16/2015 Start Qty: 1.00

1

Cust Item ID:

Required Date: 12/23/2015 Req'd Qty: 1.00

1

Customer:

Reference:

Approvals: Process Plan: SA Date: 20151116

Tooling:

Date:

Run Start ***NR1***

QC: _____ Date: _____ SPC (Y/N): _____

Date:

Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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Draw Nbr	Revision Nbr								
D412-786-1	<u>PC</u>	<u>habel</u>							

100 Document Control 0.00

100

DC

DOCUMENT CONTROL

Memo

0.00

Doc.Control -USB or Paperwork

Photocopy bluefile and create labels per PPP D412-786-013 chg001

IX DAS
28
9-89 DEC 11 2015

110 Pick Kit 0.00

110

Packaging

Memo

0.00

Packaging

IX DAS
26
9-89 DAS
27
9-89 NOV 30 2015

120 QC4- 100% Inspect kits for completeness 0.00

120

QC

Memo

0.00

Quality Control

IX DAS
28
9-89 DEC 01 2015

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐							
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval				
Description Work Order Deviation				Disposition							
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐		☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due		FAULT CATEGORY ☐ Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter		☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes		☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center		☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence	
				OTHER :							

Work Order ID 139205***139205***

Page 2

Item ID: D412-786-013

Accept

N900040100Setup Start ***NS1***

Revision ID:

Stop ***NS2***

Item Name: Fwd Hardpoint Installation

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Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start ***NR1***

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
130	Packaging	0.00							
130									
Packaging	Memo	0.00							
Packaging	Identify and pack for shipping as per PPP D412-786-013								
	Location: _____								
	PPP Rev: <u>PPP 139171</u>								
140	QC21- Final Inspection - Work Order Release	0.00							
140									
QC	Memo	0.00							
Quality Control									

SA 20151202

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval		
Description Work Order Deviation				Disposition					
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐		OTHER : _____					

Picklist Print

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Page 1

Work Order ID: 139205

139205

Parent Item: D412-786-013

D412-786-013

Parent Item Name: Fwd Hardpoint Installation

Start Date: 11/16/2015

Required Date: 12/23/2015

Start Qty: 1.00

Required Qty: 1.00

Comments: IPP REV:A NEW ISSUE 12-04-27 JLM VERIFIED BY:DD

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
D3870-041 *D3870-041* Hardpoint, Fwd LH		Manufactured	No				Each	2.0000		1			DAS 26 9-89
	DAS 28 9-89			<u>Location</u>		<u>Loc Qty</u>		<u>Loc Code</u>					DAS 26 9-89
				ST056		2							DAS 26 9-89
				111676		2							DAS 26 9-89
D3870-042 *D3870-042* Hardpoint, Fwd RH		Manufactured	No				Each	2.0000		1			DAS 26 9-89
	DAS 28 9-89			<u>Location</u>		<u>Loc Qty</u>		<u>Loc Code</u>					DAS 26 9-89
				ST053		2							DAS 26 9-89
				111677		2							DAS 26 9-89
D3870-5 *D3870-5* Mount, Fwd Upper		Manufactured	No				Each	8.0000		1			DAS 26 9-89
	DAS 28 9-89			<u>Location</u>		<u>Loc Qty</u>		<u>Loc Code</u>					DAS 26 9-89
				ST056		8							DAS 26 9-89
				121992		8							DAS 26 9-89
D3871-1 *D3871-1* Doubler		Manufactured	No				Each	7.0000		1			DAS 26 9-89
	DAS 28 9-89			<u>Location</u>		<u>Loc Qty</u>		<u>Loc Code</u>					DAS 26 9-89
				ST056		7							DAS 26 9-89
				111907		7							DAS 26 9-89

NOV 30 2015

Picklist Print

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Work Order ID: 139205

Parent Item: D412-786-013

Parent Item Name: Fwd Hardpoint Installation

139205

D412-786-013

Start Date: 11/16/2015

Required Date: 12/23/2015

Start Qty: 1.00

Required Qty: 1.00

D3871-2 Manufactured No

Each 7.0000 1

D3871-2

Doubler

DAS
28
9-89

Location

Loc Qty

Loc Code

ST063

7

111908

7

1X

MS21042L3

Purchased No

Each 529.0000

10

MS21042L3

Nut

DAS
28
9-89

Location

Loc Qty

Loc Code

FP001

300

M130922

300

10X

GA

90

M131317

90

ST304

139

M133498

139

MS27039-1-11

Purchased No

Each 336.0000

8

MS27039-1-11

Screw

DAS
28
9-89

Location

Loc Qty

Loc Code

CA

253

124326

253

GA

25

125654

13

9662

12

ST285

58

m131317

58

8X

NOV 30 2015

DAS
26
9-89

BAS
27
9-89

DAS
26
9-89

BAS
27
9-89

DAS
26
9-89

BAS
27
9-89

Picklist Print

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Work Order ID: 139205

Parent Item: D412-786-013

Parent Item Name: Fwd Hardpoint Installation

139205

D412-786-013

Start Date: 11/16/2015

Required Date: 12/23/2015

Start Qty: 1.00

Required Qty: 1.00

MS27039-1-12

Purchased

No

Each

152.0000

1

DAS
26
9-89
27
9-89

MS27039-1-12

Screw

DAS
28
9-89

Location

Loc Qty

Loc Code

cck007a

100

m133483

100

ST285

52

m133031

52

Each

800.0000

1

DAS
26
9-89
27
9-89

MS27039-1-14

Purchased

No

MS27039-1-14

Screw

DAS
28
9-89

Location

Loc Qty

Loc Code

cck007a

700

124326

700

GA

94

120449

94

ST285

6

m130388

6

Each

2,461.000

10

DAS
26
9-89
27
9-89

NAS1149D0332J

Purchased

No

NAS1149D0332.J

Washer

DAS
28
9-89

Location

Loc Qty

Loc Code

CA

14

m129682

14

FP001

78

m129682

78

GA

369

m132677

369

ST264

2000

m133498

2000

NOV 30 2015

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Shop Packet Print

Page 3

Work Order ID 139205

139205

Page 1

November 16, 2015 2:44:45 PM

To ship Jan 11 2016

Item ID: D412-786-013

Accept

N900040100

Setup Start *NS1*

Revision ID:

Stop *NS2*

Item Name: Fwd Hardpoint Installation

Start Date: 11/16/2015 Start Qty: 1.00

1

Cust Item ID:

Required Date: 12/23/2015 Req'd Qty: 1.00

1

Customer:

Reference:

Approvals: Process Plan: SA Date: 20151116

Tooling:

Date:

Run Start *NR1*

QC:

Date:

SPC (Y/N):

Date:

Stop *NR2*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

Draw Nbr

Revision Nbr

D412-786-1

B

label

100

Document Control

0.00

100

DOCUMENT CONTROL

DC

Memo

0.00

Doc.Control -USB or Paperwork

Photocopy bluefile and create labels per PPP D412-786-013 chg001

MCJ

DEC 01 2015

110

Pick Kit

0.00

110

Packaging

Memo

0.00

Packaging

IX

DAS
26
9-89

NOV 30 2015

120

QC4- 100% Inspect kits for completeness

0.00

120

QC

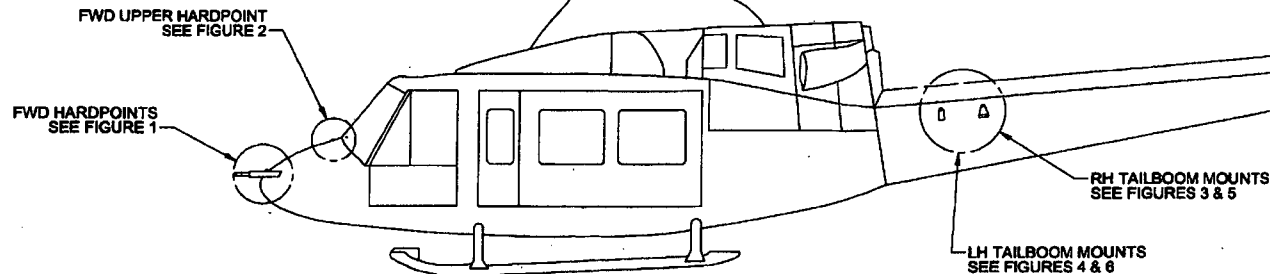
Memo

0.00

Quality Control

REFERENCE ONLY

DAS
28
3-89



D412-786-011/-021 HARDPOINT KIT

QTY -011	QTY -013	QTY -015	QTY -021	QTY -025	PART NUMBER	DESCRIPTION
X					D412-786-011	HARDPOINT KIT
1	X		1		D412-786-013	FWD HARDPOINT KIT
1		X			D412-786-015	TAILBOOM MOUNT KIT
			X		D412-786-021	HARDPOINT KIT
			1	X	D412-786-025	TAILBOOM MOUNT KIT
		1			D3866-041	TAILBOOM MOUNT
		2			D3866-043	TAILBOOM MOUNT
	1				D3870-041	FWD LH HARDPOINT
	1				D3870-042	FWD RH HARDPOINT
	1				D3870-5	FWD UPPER HARDPOINT
	1				D3871-1	DOUBLER
	1				D3871-2	DOUBLER
				1	D4950-041	TAILBOOM MOUNT
				2	D4950-043	TAILBOOM MOUNT
	10	12		12	MS21042L3	NUT
	8	12		12	MS27039-1-11	SCREW
	1				MS27039-1-12	SCREW
	1				MS27039-1-14	SCREW
	10	24		24	NAS1149D0332J	WASHER

INSTALLATION	WEIGHT	LONGITUDINAL		LATERAL	
		ARM	MOMENT	ARM	MOMENT
D412-786-011 HARDPOINT KIT	0.58 LBS 0.26 KG	184.87 IN 4.18 M	95.51 IN-LB 1.09 KG-M	-1.25 IN -0.03 M	-0.73 IN-LB -0.008 KG-M
D412-786-013 FWD HARDPOINT KIT	0.22 LBS 0.10 KG	-13.56 IN -0.34 M	-2.98 IN-LB -0.03 KG-M	2.36 IN 0.08 M	0.52 IN-LB 0.006 KG-M
D412-786-015 TAILBOOM MOUNT KIT	0.36 LBS 0.16 KG	273.58 IN 6.95 M	98.49 IN-LB 1.11 KG-M	-3.47 IN -0.08 M	-1.25 IN-LB -0.01 KG-M
D412-786-021 HARDPOINT KIT	0.64 LBS 0.29 KG	164.87 IN 4.18 M	105.39 IN-LB 1.21 KG-M	-1.25 IN -0.03 M	-0.08 IN-LB -0.01 KG-M
D412-786-025 TAILBOOM MOUNT KIT	0.42 LBS 0.19 KG	273.58 IN 6.95 M	114.90 IN-LB 1.32 KG-M	-3.47 IN -0.08 M	-1.46 IN-LB -0.02 KG-M

C	MODIFY D3870-5 INSTALLATION INSTRUCTION, ADD TO NOTE 2, SH 3 AND CLARIFY/CORRECT VIEW C-C (ZN A8-3, C3-3)	DB	14.04.28
B	ADD -021/-025 KITS, SHEETS 6 & 7	DB	13.10.17
A	NEW ISSUE	DB	09.01.14
REV	DESCRIPTION	BY	DATE
DESIGN	DB	DART AEROSPACE LTD	
DRAWN	DB	HAWKESBURY, ONTARIO, CANADA	
CHECKED	<i>[Signature]</i>	DRAWING NO.	REV. C
MFG. APPR.	N/A	D412-786-1	SHEET 1 OF 7
APPROVED	<i>[Signature]</i>	TITLE	SCALE
DE APPR.	<i>[Signature]</i>	HARDPOINT KIT INSTALL	NTS
DATE	14.04.28	COPYRIGHT © 2000 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSES OR COPIED OR REPRODUCED IN ANY FORM OR BY ANY MEANS WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.	

NOTES:

- 1) D412-786-011/-021 HARDPOINT KIT REQUIRED ON 412/412EP AIRCRAFT UTILIZING D412-695-011 BLADE FOLDING KIT WHERE WIRE STRIKE COMPATIBILITY IS REQUIRED
- 2) D412-786-021 HARDPOINT KIT REQUIRED ON AIRCRAFT EQUIPPED WITH BLR TAILBOOM STRAKE KIT
- 3) TOUCH UP DRILLED HOLES WITH ALODINE PER THE AIRCRAFT MAINTENANCE MANUAL
- 4) TORQUE FASTENERS AS FOLLOWS: 10-32; 20-25 IN-LBS
- 5) PRIME AND PAINT HARDPOINTS TO MATCH AIRCRAFT PAINT SCHEME PER AIRCRAFT MAINTENANCE MANUAL